

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) In a wireless communications system having a wireless channel with time slots for transmission of delay-sensitive data and non-delay-sensitive data, a method for determining whether a time slot in the wireless channel should be allocated for delay-sensitive data or non-delay-sensitive data, the method comprising the steps of:

determining an ideal slot separation for each delay-sensitive application using the wireless channel;

determining, for each delay-sensitive application, whether a number of slots since a time slot was granted to the each delay-sensitive application is equal to or greater than the ideal slot separation for the each delay-sensitive application; and

assigning a time slot to carry delay-sensitive data for the each delay-sensitive application that has the number of slots since a time slot was granted to the each delay-sensitive application that is equal to or greater than the ideal slot separation for the each delay-sensitive application.

2. (original) The method of claim 1 further comprises the step of:

assigning a time slot to carry non-delay-sensitive data if each delay-sensitive application has the number slots since a time slot was granted to the each delay-sensitive application that is less than the ideal slot separation for the each delay-sensitive application.

3. (original) The method of claim 1 further comprising the step of:

determining whether an acknowledgement time slot needs to be allocated to acknowledge a packet sent over the wireless channel; and

assigning a time slot for acknowledging the packet if the acknowledgement time slot needs to be allocated.

4. (original) The method of claim 3 further comprising the step of:
determining whether a non-delay-sensitive slot needs to be allocated; and
determining whether a maximum time between random access time slots has been met or exceeded;
assigning a time slot for a random access to the wireless channel if a non-delay-sensitive slot is not needed; and
assigning a time slot for non-delay-sensitive data if a time slot is needed for non-delay-sensitive data and if the maximum time between random access slots has not been met or exceeded.

5. (original) The method of claim 4 wherein the step of determining whether a non-delay-sensitive slot needs to be allocated further comprises determining whether the non-delay-sensitive slot is needed to accommodate transfers for pending applications using the wireless channel.

6. (original) The method of claim 3 wherein the step of determining whether an acknowledgement slot is needed comprises the steps of:
detecting whether a packet transferred over the wireless channel requires an acknowledgement;
determining whether an acknowledgement time out value has occurred since detecting that an acknowledgement slot is required;
determining that an acknowledgement slot is needed if an acknowledgement time out value has occurred.

7. (original) The method of claim 6 wherein the step of determining whether an acknowledgement time out value has occurred further includes the steps of:
initializing a counter for each packet that needs an acknowledgement slot;
incrementing the counter for each slot that occurs on the wireless channel;
comparing the counter with the acknowledgement timeout value to determine whether the counter is equal to or greater than the acknowledgement timeout value.

8. (original) The method of claim 1 wherein determining the ideal slot separation for each delay-sensitive application further includes dividing a total number of slots that occur in one second over the wireless channel by a number of slots per second allocated to the each delay-sensitive application.

9. (original) The method of claim 1 wherein the step of determining, for each delay-sensitive application, whether a number of slots since a time slot was granted to the each delay-sensitive application is equal to or greater than the ideal slot separation for the each delay-sensitive application further comprises the steps of:

initializing a counter for each delay-sensitive application;

incrementing the counter by one for each slot occurring on the wireless channel; and

comparing the counter for each delay-sensitive application with the ideal slot separation for the each delay-sensitive application.

10. (original) The method of claim 9 further comprising the steps of:

updating the counter for a delay-sensitive application that is granted a delay-sensitive slot with a number of slots that occurred beyond the ideal slot separation for the delay-sensitive application.

11. (canceled)

12. (canceled)

13. (canceled)

14. (canceled)

15. (canceled)

16. (previously presented) The method of claim 1 comprising the steps of:
determining a service type for each packet to be transmitted over the wireless channel;
selecting a protocol for transmitting each packet over the wireless channel based on the service type, wherein the protocol includes a type of error correction.

17. (original) The method of claim 16 wherein the protocol includes a method for accessing the wireless channel.

18. (original) The method of claim 17 wherein the method of accessing the wireless channel includes accessing the channel using a time slot allocated to delay-sensitive data.

19. (original) In a wireless communications system having a wireless channel with time slots for transmission of delay-sensitive data and non-delay-sensitive data, an apparatus for determining whether a time slot in the wireless channel should be allocated for delay-sensitive data or non-delay-sensitive data, the apparatus comprising:

a processor that:

determines an ideal slot separation for each delay-sensitive application using the wireless channel;

determines, for each delay-sensitive application, whether a number of slots since a time slot was granted to the each delay-sensitive application is equal to or greater than the ideal slot separation for the each delay-sensitive application; and

assigns a time slot to carry delay-sensitive data for the each delay-sensitive application that has the number of slots since a time slot was granted to the each delay-sensitive application that is equal to or greater than the ideal slot separation for the each delay-sensitive application.

20. (original) The apparatus of claim 19 wherein the processor:
assigns a time slot to carry non-delay-sensitive data if each delay-sensitive application has the number slots since a time slot was granted to the each delay-sensitive application that is less than the ideal slot separation for the each delay-sensitive application.

21. (original) The apparatus of claim 19 wherein the processor:
determines whether an acknowledgement time slot needs to be allocated to acknowledge a packet sent over the wireless channel; and
assigns a time slot for acknowledging the packet if the acknowledgement time slot needs to be allocated.

22. (original) The apparatus of claim 21 wherein the processor:
determines whether a non-delay-sensitive slot needs to be allocated; and
determines whether a maximum time between random access time slots has been met or exceeded;
assigns a time slot for a random access to the wireless channel if a non-delay-sensitive slot is not needed; and
assigns a time slot for non-delay-sensitive data if a time slot is needed for non-delay-sensitive data and if the maximum time between random access slots has not been met or exceeded.

23. (original) The apparatus of claim 22 wherein the processor:
determines whether the non-delay-sensitive slot is needed to accommodate transfers for pending applications using the wireless channel.

24. (original) The apparatus of claim 21 wherein the processor determines whether an acknowledgement slot is needed by:
detecting whether a packet transferred over the wireless channel requires an acknowledgement;
determining whether an acknowledgement time out value has occurred since detecting that an acknowledgement slot is required; and
determining that an acknowledgement slot is needed if an acknowledgement time out value has occurred.

25. (original) The apparatus of claim 24 wherein determining whether an acknowledgement time out value has occurred further includes the processor:

- initializing a counter for each packet that needs an acknowledgement slot;
- incrementing the counter for each slot that occurs on the wireless channel;
- comparing the counter with the acknowledgement timeout value to determine whether the counter is equal to or greater than the acknowledgement timeout value.

26. (original) The apparatus of claim 19 wherein the processor determines the ideal slot separation for each delay-sensitive application by dividing a total number of slots that occur in one second over the wireless channel by a number of slots per second allocated to the each delay-sensitive application.

27. (original) The apparatus of claim 19 wherein the processor determines, for each delay-sensitive application, whether a number of slots since a time slot was granted to the each delay-sensitive application is equal to or greater than the ideal slot separation for the each delay-sensitive applications by:

- initializing a counter for each delay-sensitive application;
- incrementing the counter by one for each slot occurring on the wireless channel; and
- comparing the counter for each delay-sensitive application with the ideal slot separation for the each delay-sensitive application.

28. (original) The apparatus of claim 27 wherein the processor:

- updates the counter for a delay-sensitive application that is granted a delay-sensitive slot with a number of slots that occurred beyond the ideal slot separation for the delay-sensitive application.

29. (canceled)

30. (canceled)

31. (canceled)

32. (canceled)

33. (canceled)

34. (previously presented) The system of claim 19 comprising:
a processor that:

determines a service type for each packet to be transmitted over the wireless channel; and

a wireless modem coupled to the processor that:

selects a protocol for transmitting each packet over the wireless channel based on the service type, wherein the protocol includes a type of error correction.

35. (original) The method of claim 34 wherein the protocol includes a method for accessing the wireless channel.

36. (original) The method of claim 35 wherein the method of accessing the wireless channel includes accessing the channel using a time slot allocated to delay-sensitive data.